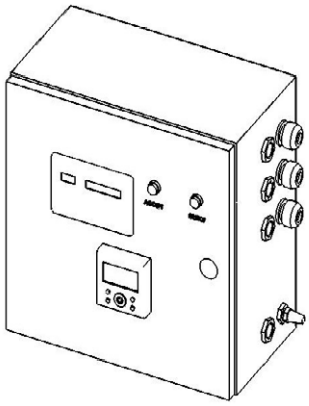
AIMCO

AIMCO Intelli-Control Tool System Manual



Model ABC-4000-3

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Installation

The system control box is supplied with (4) mounting holes in the rear of the box. These holes are 1/2” in diameter and are 14.5” between centers. Use these holes to mount the control box in the desired location

System Requirements

The following outlines the system requirements:
Electrical - 120VAC, 4 AMPS
Air - 120 SCFM @ 80 PSI

Connections

Power is connected by inserting the power cord into a standard 120VAC outlet.

Air is supplied to the control box by connecting air to the supply connection on the left side of the control box. An air line filter should be installed prior to the control box to remove any moisture in the air (customer supplied).

Tool air connections can be located on the right side of the control box. These connections are 1/2 NPT as well. The tool connections are labeled “A”, “B” and “C” from top to bottom.

Make sure to check all fitting bulkheads when making the connections to ensure that none of them have loosened during shipping.

NOTE: If any tool lubrication is to be used, it must be installed down stream of the control box.

Refer to the following figures for connection locations.

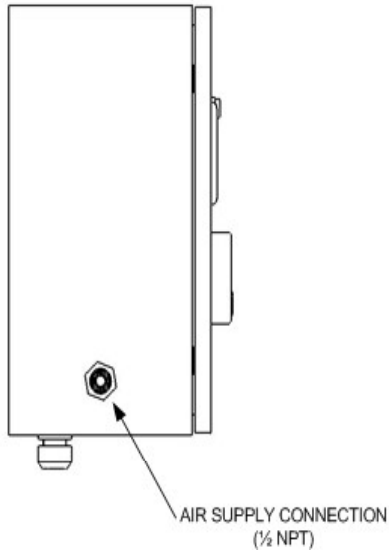

Figure 1. Left Side of Control Box

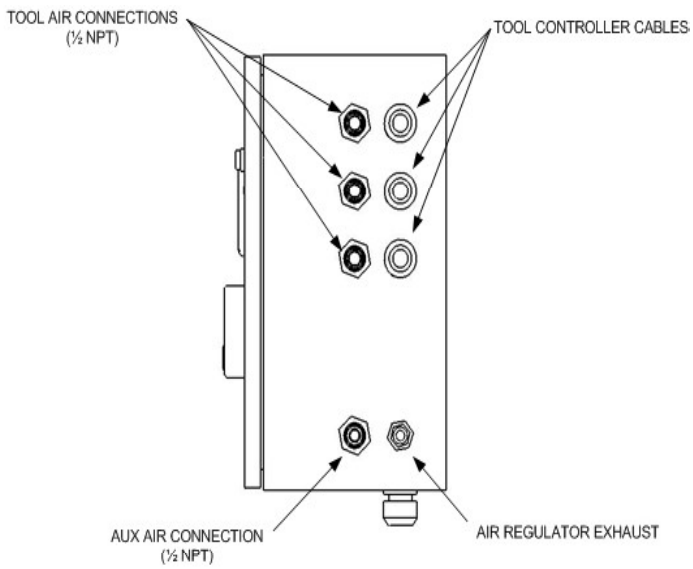

Figure 2. Right Side of Control Box

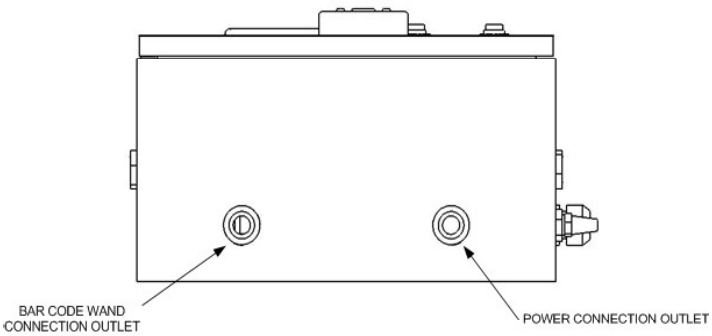

Figure 3. Bottom View of Box

Once all of the air and power connections have been made, the cables for the tool controls must be connected to the corresponding tool control boxes. Please refer to the wiring schematic for these connections.

Tool Controllers

Once all of the tool controller cables have been connected to the tool controllers, they may need to be programmed for the specific work selects and torques. Please refer to the tool controller manuals included with this system.

UEC-4500 Tool Controller

When using the UEC-4500 Tool Controller, the following programming changes must be made in order to communicate properly with the Intelli-Control box:

NOTE: Please refer to the UEC-4500 manual for instructions on changing these modes.

Mode 71 = Value 7
Mode 72 = Value 8
Mode 73 = Value 3
Mode 74 = Value 3
Mode 75 = Value 4
Mode 76 = Value 8

Operation

This section outlines the features and operation of the Intelli-Control Tool System.

Control Box Features

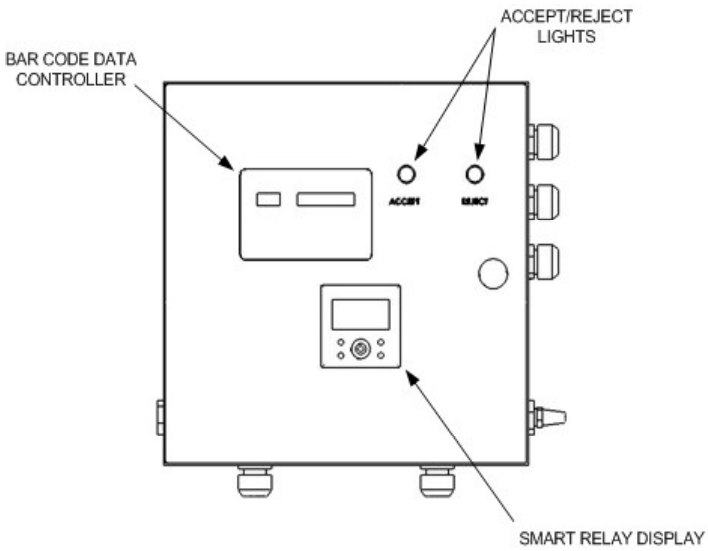

Figure 5. Control Box Features

Bar Code Data Controller
The bar code data controller and the bar code wand (not shown) read in the bar codes of the pre-programmed tasks and send this information to the smart relay. *For more information, please refer to the Bar Code Data Controller Manual.*

Smart Relay Display
The smart relay is used to display information to the operator. It is also used to program the air pressure for each task.

Accept/Reject Lights
These lights display the result of each run down. A signal is received from the tool controller and the accept light (green) is lit if the torque is within range or the reject light (red) is lit if there is an error.

Bar Code Wand (not shown)
The bar code wand is used by the operator to scan the bar code label on each part prior to tightening. *For more information, please refer to the Bar Code Wand Manual.*

Using the Intelli-Control Tool System

Once all of the connections are made and the tool controllers have been programmed, the system is ready for use. Simply scan a part bar code and the system will adjust the tool torque and air pressure for that task.

Process Details

1. When a task is selected, the bar code data controller will select the task from the pre-programmed task list.

2. This information is sent to the smart relay and the work select for that task is selected.

3. The tool for the selected task is activated and the other tools will be disabled.

4. Displays - The display on the bar code controller display the task description, tool/controller and work select. The display on the smart relay will display the task air pressure and the task description.

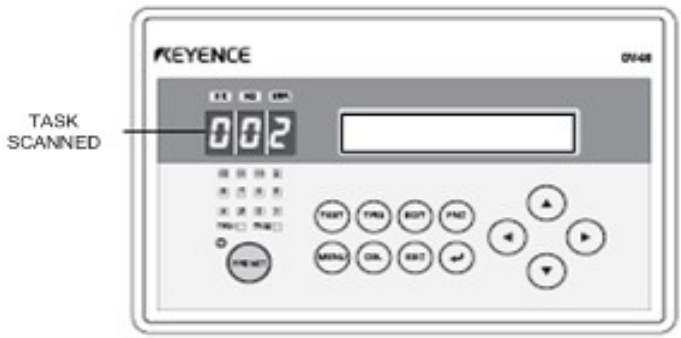

Figure 6. Bar Code Controller

Figure 7. Smart Relay

Smart Relay Features

The air pressure for each task and the AUX AIR can be individually set. The is done using the smart relay. The following outlines the relay and how to adjust the air pressure for each task.

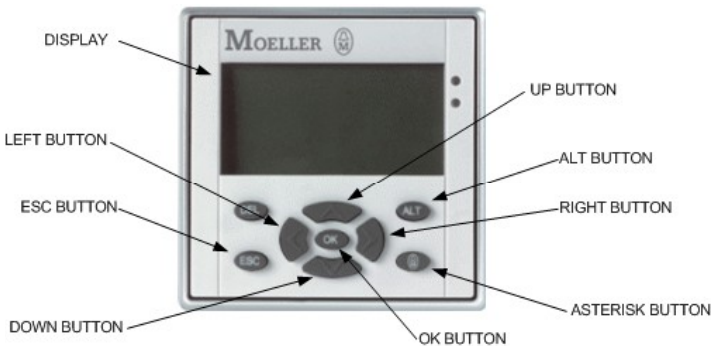

Figure 8. Smart Relay Display and Buttons

Display - This displays the information for the operator.
UP, DOWN, LEFT, RIGHT BUTTONS - These buttons are used to navigate between the screens and change PSI values.
ALT, ASTERISK BUTTONS - Used to increase and decrease the PSI values.
ESC BUTTON - Pressing the ESC key from any screen returns to the MAIN screen.
OK BUTTON - Used to acknowledge an error from the tool controllers.

Smart Relay Screens

The following is a list of the screens available on the smart relay and their functions:

Figure 9. Main Screen

The MAIN screen displays the current air pressure setting and the current task. Pressing the **ESC** button on any screen returns to this screen.

Figure 10. Edit Task Air Pressure Screen

Pressing the Down Button on the Main screen displays the Edit Task Air Pressure screen. This screen allows the operator to adjust the air pressure for each task.
Pressing the RIGHT or LEFT button from this screen toggles thru the TASK screens.

Figure 11. Task Air Pressure Screen

The TASK AIR PRESSURE screen displays the individual air pressures.
Pressing the UP or DOWN button increases or decreases the pressure by 1 PSI.
Pressing the ALT or * button increases or decreases the pressure by 5 PSI.
Once the desired pressure is displayed, press the RIGHT or LEFT button to go to the next task or press the ESC button to return to the MAIN screen. The new pressure setting will be used the next time that the task is scanned.

Default Air Pressure Settings

The smart relay is preset with the following air settings:

TASK #	PSI
1	45
2	45
3	45
4	55
5	55
6	55
7	60
8	60
9	60
10	60
11	70
12	70
13	70
14	80
15	80
16	85
17	85
18	85
19	85
20	85
21	85
22	85
23	85
24	85
AUX AIR	80

Using the AUX AIR

The controller is equipped with an auxiliary air (AUX AIR) connection. This can be used for an additional, non-controlled tool.

To activate the AUX AIR, simply scan the bar code label found on the front of the control box located under the smart relay.

Figure 12. AUX AIR Bar Code Label

This will set the controller air pressure to the air pressure set for AUX AIR in the smart relay and will disable all of the tools.

NOTE: *The AUX AIR connection is always active and is set to the "current" air pressure.*

Maintenance

The Intelli-Control Tool System is designed with minimal maintenence. The following items should be performed regularly to ensure the life of the control box.

- Empty the air filter daily.

- Check all fitting bulkheads weekly to make sure that none of them have loosened.

SMC IP Air Regulator

The air regulator is set for a maximum air pressure of 101 PSI. This not only limits the air pressure to the tools, but changes the linear scale of the regulator. If the air pressure needs to be changed or the air regulator needs to be replaced, perform the following:

1. ***UNLOCK the regulator***. This is done by holding down the “UNLOCK “ button on the top of the regulator until “UNL” flashes on the regulator display and then press the “SET” button.

2. ***SET the max air pressure***. Use the Down arrow key to step through the menu until “F2” is displayed and press “SET”. The number on the display is the current max air pressure setting. Use the “UP” and “DOWN” arrow buttons to adjust the number to the desired value and press the “SET” button.

3. LOCK the regulator. This is done by holding down the “LOCK” button until “LOC” flashes on the display and then press the “SET” button.

NOTE: Refer to the air regulator manual for more information.

Additional Information

Troubleshooting Guide

The following is a basic list of problems:

Problem	Cause	Solution
Bar Code Data Controller Displays “999” when label is scanned	The Data Controller does not recognize the label. Either the label is damaged or is not a programmed number.	Check the label to make sure that it is not damaged. If the number needs to be added to the program, contact your AIMCO Rep.
No air to tool	Tool is disabled based on the task scanned.	Check the Bar Code Data Controller display for the correct tool.
No air to system	Supply air is disconnected or removed.	Check supply air connection or air supply.
No power to system	System has been unplugged or circut breaker has been tripped.	Check that the power is plugged in. If the circuit breaker has been tripped or the fuse is blown, contact your AIMCO Rep.

Recommended Spare Parts

The following parts should be kept in stock:

Vendor	Part Number	Description	Quantity
SMC	ITV3050-31N4L4	IP Regulator, 120 PSI, 0-10VDC, 1/2” NPT	1
Keyence	BL-80RKE	Bar Code Reader - Handheld	1
Keyance	DV90SET	Bar Code Controller Software	1
Berkert	456443X	Valve, 1/2” NPT, 24VDC Normally Closed	1
Moeller	-	Easy Soft Pro 6.10 Easy Relay software	1
Moeller	EASY800 PC-CAB	Easy Relay Programming Cable	1
-	-	Standard USB Cable for programming Bar Code Data Controller	1

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